

PLATE XI.

- Fig. 1. *Ennya bicristata* Stal, lateral outline.
Fig. 2. Same, frontal outline.
Fig. 3. *Heranice miltoglypta* Fairm., lateral outline.
Fig. 4. Same, frontal outline.
Fig. 5. *Thrasymedes pallescens* Stal, lateral outline.
Fig. 6. Same, frontal outline.
Fig. 7. *Maturna lloydi* sp. nov., lateral outline.
Fig. 8. Same, frontal outline.
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SYNOPSIS OF NORTH AMERICAN SPECIES OF THE
GENUS BEZZIA (CHIRONOMIDÆ).

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Owing to the fact that descriptions of species in all genera of the Ceratopogoninæ have been published at various times in different journals, and that heretofore no one has attempted to bring them together in the form of synoptic tables, it is an extremely difficult and tedious task to identify specimens belonging to this subfamily. Following my invariable custom when working over material belonging to other families, I have drawn up a synoptic table for the species of *Bezzia*, and hope that in presenting this for publication I may be able to materially assist students of Chironomidæ in identifying their species. I have already in print synopses of several genera, and in this paper present one which includes all the species known to me from North America which belong to the genus *Bezzia*.

The members of this genus may be separated from all others in Ceratopogoninæ by the absence of the second vein, or, in other words, of the cross vein connecting the first and third veins; by the absence of surface hairs from the wings; the absence of empodia; and by the presence of thornlike bristles on the ventral surface of at least one pair of the femora. *Probezzia* differs from *Bezzia* only in having the femora without thorns.

None of the species of *Bezzia* are common with the possible exception of *setulosa* Loew, which is the only one known in the early

stages. Professor Johannsen describes the larva and pupa of this species in Bulletin 86 (1905) of the New York State Museum, p. 102, and the writer has also succeeded in rearing the species.

Descriptions of three species are given in this paper, the types being deposited in the collection of the Illinois State Laboratory of Natural History. The species taken by the writer have all been either swept from vegetation near streams, or taken on windows, or at rest on houses, etc., in similar situations.

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SYNOPSIS OF SPECIES.

1. Wing with two black spots *punctipennis* Williston.
Wing unspotted 2
2. Only the fore femora with spines 3
At least fore and hind femora spinose 10
3. Halteres black 4
Halteres pale, rarely brownish 5
4. Claws simple *venustula* Williston.
Claws with central tooth *flavitaris* n. sp.
5. Fifth hind tarsal joint with ventral spines 6
Fifth joint of hind tarsus unspined 7
6. Third vein extending six sevenths of the wing length; fourth vein forking slightly before the cross vein *setipes* Coquillett.¹
Third vein extending three fourths of the wing length; fourth vein forking considerably beyond the cross vein *expolita* Coquillett.
7. Hind tibiae with distinct bristles *media* Coquillett.
Hind tibiae without distinct bristles 8
8. Abdomen black *pruinosa* Coquillett.
Abdomen in part pale yellow 9
9. Abdomen pale yellow, dorsum of first segment brown. *varicolor* Coquillett.
Abdomen pale yellow, apical half blackened *apicata* n. sp.
10. All femora with one spine *barberi* Coquillett.
Femora otherwise than above 11
11. Only fore and hind femora spined 12
All femora with spines 13
12. Last tarsal joint spinose ventrally; halteres yellow *setipes* Coquillett.
Last tarsal joint without spines; halteres black *dentata* n. sp.
13. All femora spinose on almost their entire length *johnsoni* Coquillett.
Femoral spines confined to apical half 14
14. Halteres white; abdomen white, fuscous-tinged; hind tibiae spinose.
setulosa Loew.

¹ See also section 11.

- Halteres black or brown 15
15. Halteres brown; third vein extending four fifths of the wing length; one claw on each tarsus with central tooth *pulverea* Coquillett.
- Halteres black; third vein extending three fourths of the wing-length; both claws on tarsi with a central tooth *dentata* n. sp.

It should be borne in mind that the sexes of many of the species in Ceratopogoninae differ very considerably from each other in color, venation, and leg armature, and in using the above table care will be required to avoid misinterpretation. The females are much more common than the males, and as an indication of this I may mention that only *expolita* of the genus *Bezzia* was described from the male alone, while but two others, *punctipennis* and *setulosa*, were represented by both sexes when the original descriptions were written. It will thus be seen that there is some probability that the synopsis here given will not prove altogether reliable for the identification of males of the described North American species of this genus, but it will serve for the identification of the females.

***Bezzia flavitarsis* new species.**

Female.—Shining black. Head black, flagellum of antennae, and the palpi brown. Disc of mesonotum and scutellum glossy black; pleurae shining, slightly brownish on the lower portions. Abdomen shining black. Legs black, fore femora except the dorsal surface, mid femora narrowly on the ventral surface, fore and mid tibiae at apices, and the entire tarsi of all legs brownish yellow. Wings clear, veins yellow. Halteres black, stems partly yellowish, apices of knobs brown. All bristles and hairs black.

Eyes distinctly separated, the frons about one fifth as wide as head; antennae slender, last five joints elongated, the entire length of each antenna equal to that of head and thorax combined; proboscis much shorter than head. Mesonotum with numerous closely placed short hairs; a group of distinct setulose hairs above and in front of wing base, and two to three in front of lateral anterior angles of scutellum on mesonotum; scutellum with very weak discal hairs and about eight marginal setulae. Abdominal segments almost bare. Legs of moderate strength, fore femora slightly thickened; ventral surface of fore femora with four to five distinct spines, the other femora unspined; hind tibiae with the hairs on dorsal surface rather setulose; basal joint of hind tarsi as long as the next three joints combined; fourth joint about half as long as fifth; claws equal, rather short, not more than half as long as fifth joint, the latter without ventral spines, both tarsal claws with a distinct tooth on inner surface at middle. Wings with third vein extending three fourths of the wing length; first vein joining costa very slightly before middle of last section of third; media forking before the cross vein, the base of its posterior

branch indistinct; cubitus forking slightly distad of the cross vein, both of its branches slightly arcuate. Length, 2.25 mm.

Type locality: Monticello, Ill., June 21, 1914 (J. R. Malloch).

Bezzia apicata new species.

Male.—Head black; scape of antennæ black, flagellum, except joints fourteen and fifteen, which are blackened, pale yellow; antennal plumes pale yellow; palpi brown. Thorax deep black, disc subshining, a large white pollinose spot behind each anterior angle on the submedian line, each spot being carried posteriorly for a short distance as a narrow stripe, giving it the appearance of a cornucopia with the wide end towards the anterior margin of disc; scutellum black, subopaque; pleuræ subshining on upper, glossy on lower, half. Abdomen whitish yellow, apical three segments and the hypopygium shining black. Legs yellow; coxæ, a distinct band before apex of fore femora, an indistinct one before apex of mid femora, the apical fifth of hind femora, and an indistinct band on fore tibiæ and the apices of all tibiæ, black; tarsal claws black. Wings clear, veins almost colorless. Halteres whitish yellow. Thoracic bristles black, the soft hairs on other parts of body pale.

Antenna about 1.5 times as long as head and thorax together, joints eleven to fifteen elongated, basal joint globose, large; eyes separated. Mesonotum with surface slightly granulose, the discal hairs short, rather soft, and numerous, bristles as in *flavitaris*; scutellum with six marginal bristles. Hypopygium longer than last segment, the lateral arms slender. Legs slender, fore femora not thickened, the ventral surface with five to six thorns, the other femora without thorns; hind tibiæ with distinct soft hairs, but without setulæ; basal joint of hind tarsi subequal to the length of the next three joints combined; fifth joint about three times as long as fourth, without ventral spines; tarsal claws equal, simple, their length about half that of fifth joint. Third vein two thirds of the wing length; first vein extending to middle of last section of third; media forking at cross vein, the posterior branch indistinct at base, forming an acute angle with anterior branch; cubitus forking midway between the cross vein and apex of first. Length, 1.5 mm.

Type locality: Muncie, Ill., May 24, 1914 (J. R. Malloch).

Bezzia dentata new species.

Female.—Shining black. Head black; antennæ brown, apex of second joint and bases of the short joints of flagellum yellowish; palpi brown. Mesonotum with whitish pollinose markings as in *apicata*, postnotum and upper half of pleuræ covered with sparse whitish pollinosity, the lower half of latter glossy black. Abdomen unicolorous black, slightly shining. Legs black, fore femora, except on the dorsal surface, mid femora on basal half of the same surface, fore tibiæ at bases, fore and mid tibiæ at apices, and all the tarsi yellowish. Wings clear, veins brownish. Halteres black, stalks yellow at bases. Bristles on thorax black, the soft hairs on legs pale.

Eyes distinctly separated; antennæ slender, in length equal to about 1.5 times that of head and thorax combined, joints eleven to fifteen much elongated, the hairs on basal half of flagellum about equal in length to the joints on which they are situated. Mesonotum with numerous short setulose hairs on disc, the posterior half with two rows of three distinct bristles, situated on the lines generally occupied by dorso-centrals; the group of bristles in front of wing-base strong; scutellum short, its margin with about six bristles. Surface of abdomen with very short hairs. Legs of moderate strength, fore femora slightly thickened; thorns on femora as follows: fore, five or six; mid, one or two; hind, five or six; dorsal surface of hind tibiæ with the hairs setulose; basal joint of hind tarsi almost as long as remaining joints together; fourth joint very short, not over half as long as fifth, the latter without ventral spines; claws equal, rather short, about half as long as fifth joint, each with a distinct central tooth on inner side at middle. Third vein extending more than two thirds of the wing-length; first vein extending two fifths of the length of last section of third; media forking at cross vein, the base of posterior branch indistinct; cubitus forking slightly distad of the cross vein.

Male.—Similar to the female in color. Plumes of antennæ golden yellow, joints eleven to fifteen with short white hairs. Thoracic pruinescence very sparse.

Eyes narrowly separated; length of antenna about twice that of head and thorax combined. Bristles on posterior half of thorax stronger than in female. Hypopygium large, basal portion of lateral arm much swollen and nearly twice as long as the small clawlike apical portion. Legs more distinctly setulose than those of the female, all the tibiæ with series of distinct setulæ; tarsi as in female; claws equal, simple. Venation as in female. Length, 1.75–2.5 mm.

Type locality: Monticello, Ill., June 21–28, 1914 (J. R. Malloch).

The spines on mid femora are often difficult to see and for this reason I have inserted this species in the sections of table dealing with species "with" and also "without" spines.

A NEW SPECIES OF ARTHROMACRA WITH NOTES ON OTHER SPECIES OF LAGRIIDÆ.

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Col. Wirt Robinson has collected in Nelson Co., Virginia, a considerable number of a species of *Arthromacra* which differs from the previously described species by the vivid green color, the smooth, shining, distantly punctate thorax and especially by the great length of the last joint of the antennæ of the male. This species should be dedicated to him in recognition of the work he has done, though busy